Using Trino to analyze PLG user activation funnel

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What does PLG mean to you?

- Acquisition
- Activation
- Satisfaction
- Retention
- Expansion

NORTH STAR METRIC

VALUE

Lay the groundwork

- Collect everything and ask questions
  - Does it provide value? Quantitative vs. Qualitative
  - Is it actionable?
- Evolving north star metric
- Data latency matters
- Decoupled and self-serviced architecture
- **Data quality, data quality, data quality!**

Upsolver classic PLG

Lessons Learned

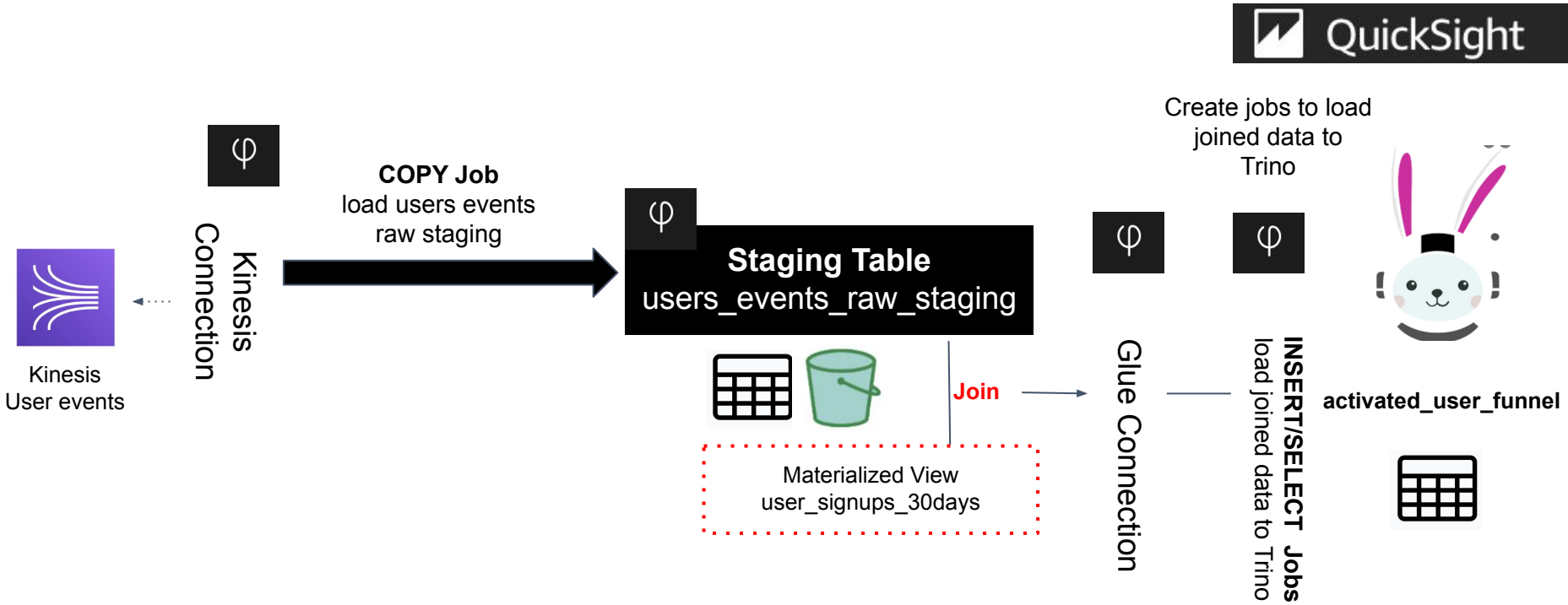
What worked for us?

- Easy *
- Handrails

What didn’t work for us?

- Unanswered questions
- Inability to handle changes
- Data quality

Demo: streaming joined data to Trino



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THANK YOU

Community Slack

Upsolver SQLake https://sqlake.upsolver.com/signup

Upsolver SQLake: create connections

```
CREATE KINESIS CONNECTION kinesis_customer360
    AWS_ROLE =
    'arn:aws:iam::4288987458:role/upsolver-role-355e3b5b-afa7-12f4fd8327eb'
    EXTERNAL_ID = '355e3b5f-960d-406b-afa7-12f4fd8327eb'
    REGION = 'us-east-1'
    READ_ONLY = TRUE;
```

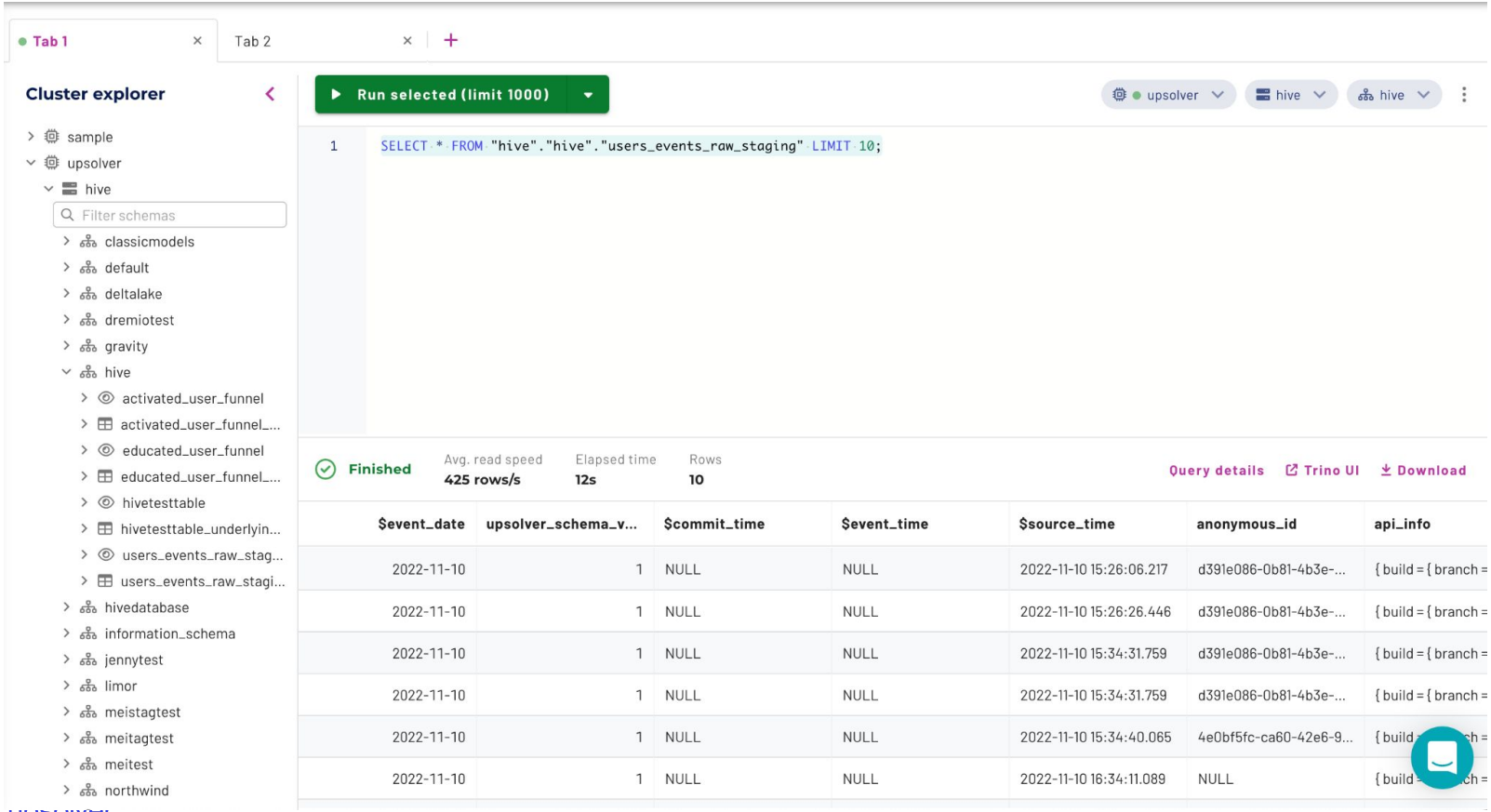
Create target Trino connection

```
CREATE S3 CONNECTION galaxy_connect
    AWS_ROLE =
    'arn:aws:iam::4839487947:role/upsolver-role-3djgg-960d-406b-afa7-12f4fd8327eb'
    EXTERNAL_ID = '3aoiduof5f-960d-406b-afa7-12f4fd8327eb';


CREATE GLUE_CATALOG CONNECTION GALAXY
    AWS_ROLE =
    'arn:aws:iam::4839487947:role/upsolver-role-3djgg-960d-406b-afa7-12f4fd8327eb'
    EXTERNAL_ID = '3aoiduof5f-960d-406b-afa7-12f4fd8327eb'
    DEFAULT_STORAGE_CONNECTION = galaxy_connect
    DEFAULT_STORAGE_LOCATION = 's3://upsolvergalaxy/'
    REGION = 'us-east-1';
```

Stream raw data into staging table

```
CREATE TABLE galaxy.hive.users_events_raw_staging
    PARTITIONED BY $event_date;


CREATE JOB load_user_events_tracking_stage
    START_FROM = BEGINNING
    AS COPY FROM KINESIS kinesis_customer360 STREAM = 'user-event-tracking'
    INTO galaxy.hive.users_events_raw_staging;
```

Querying raw data from Trino near real time



Create materialized view and target table

```
CREATE MATERIALIZED VIEW default_glue_catalog.database_4b345d.user_signups_30days AS
    SELECT user_id, first(PARSE_DATETIME(replace(substr(event_time, 1, 23), 'T', ' '),
    'Y-MM-d HH:mm:ss.SSS')) as event_timestamp
    FROM GALAXY.hive.users_events_raw_staging
    WHERE event_name = 'sign_up'
    GROUP BY 1
    WINDOW 30 DAYS;


CREATE TABLE GALAXY.hive.activated_user_funnel(
    user_id string, event_name string, event_timestamp timestamp)
    PARTITIONED BY event_name, user_id
    GLOBALLY_UNIQUE_KEYS = TRUE;
```

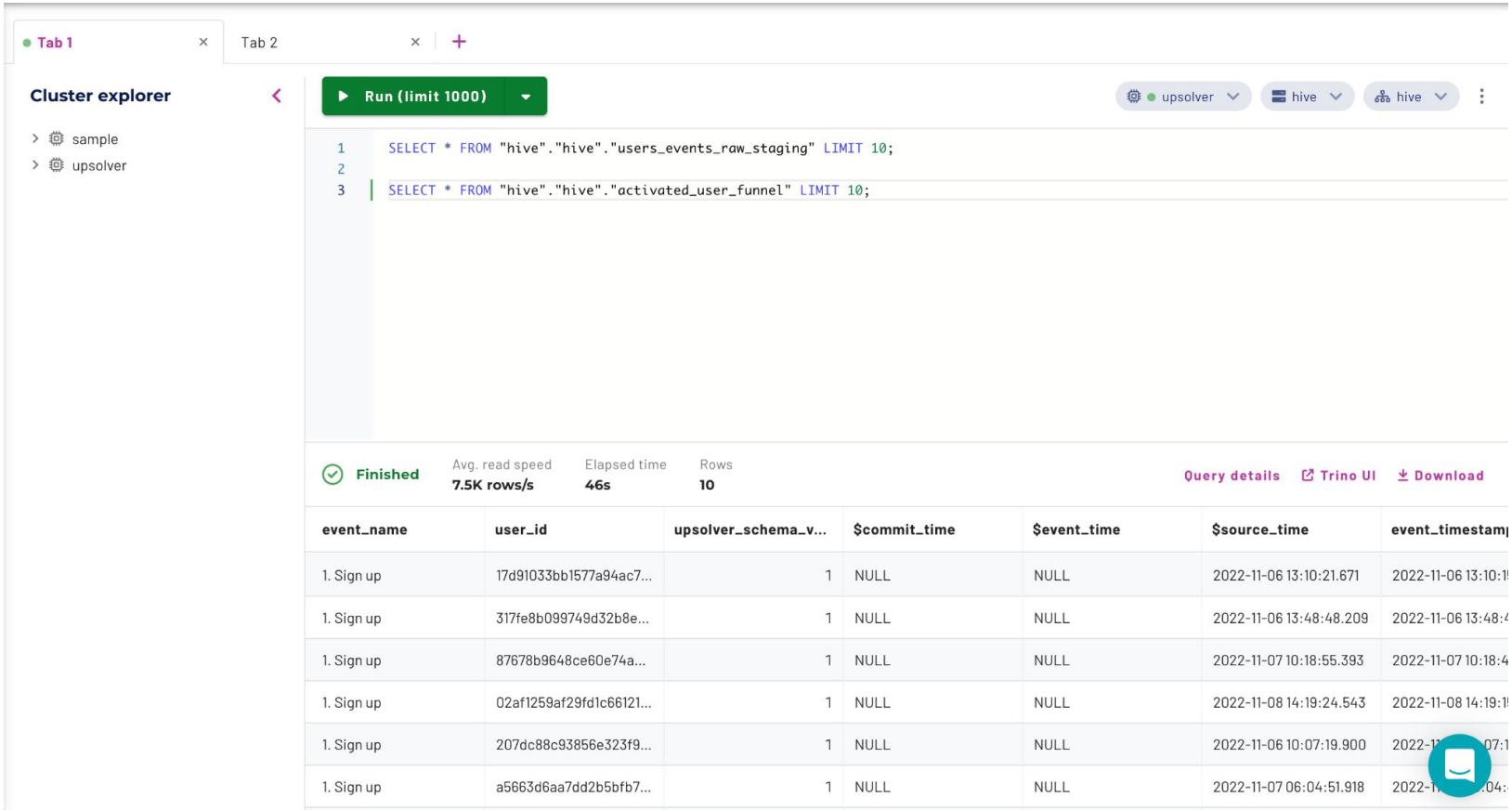
Stream aggregated data into target table

```
CREATE JOB load_activated_funnel_galaxy
   START_FROM = BEGINNING
   AS INSERT INTO GALAXY.hive.activated_user_funnel MAP_COLUMNS_BY_NAME
   SELECT md5(events.user_id) as user_id
          , case when event_name = 'sign_up' then '1. Sign up'
                 when lower(template_name) like '%sample data%' then '2. Launch sample data template'
                 when step = 'create_connection' then '3. Create connection'
                 when step = 'create_table' then '4. Create table'
                 when step = 'create_copy_from_job' then '5. Copy from job'
                 when step = 'create_transform_job' then '6. Transformation job'
                 when step = 'congratulations' then '7. View transformation results'
            end as event_name
          , first(PARSE_DATETIME(replace(substr(event_time, 1, 23), 'T', ' '), 'Y-MM-d
HH:mm:ss.SSS')) as event_timestamp
   FROM GALAXY.hive.users_events_raw_staging AS events
```

Join with materialized view

```
 LEFT JOIN default_glue_catalog.database_4b345d.user_signups_30days AS signups
   ON events.user_id = signups.user_id
   WHERE $commit_time BETWEEN run_start_time() - PARSE_DURATION('30d') AND run_end_time()
   AND signups.user_id is not null
   AND events.user_id not like '%tstmail.link'
   AND (event_name = 'sign_up'
        or lower(template_name) like '%sample data%'
        or step in ('create_connection', 'create_table', 'create_copy_from_job',
'create_transform_job', 'congratulations'))
   GROUP BY 1, 2;
```

Querying aggregated table in near real time



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QuickSight

QuickSight | PLG user tracking / Original dashboard (Modified)

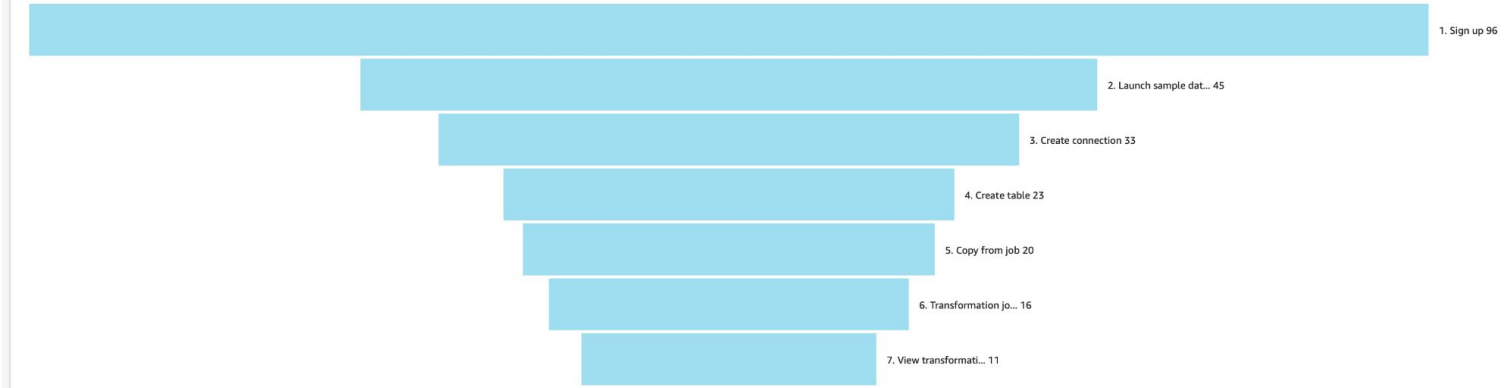
Overview | North star drill down | **Funnel drilldown** | Individual user report | Educated & activated users | Health status

Controls **Filter internal users** upsolver.com **User cohort (in days)** 30

New users to 'Educated' funnel - last 30 days

Allows us to identify the friction points as new users build their first pipeline.

Users that reach the end of this funnel are considered "Educated," meaning that they learned about the building blocks that make up a pipeline and saw them in action.



Time in minutes between educated user funnel steps

To help us identify friction points for new users within the funnel

Funnel step	1. Sign up	2. Launch sample data template	3. Create connection	4. Create table	5. Copy from job	6. Transformation job	7. View transformation results
Min	0	0.25	0.17	0.13	0.24	1.99	1.7
25th percentile	0	1.07	0.33	1.02	0.87	12.89	1.99
Median	0	2.34	0.9	3.68	1.3	13.74	7.05
75th percentiile	0	4.39	1.98	4.36	1.99	13.91	7.39

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